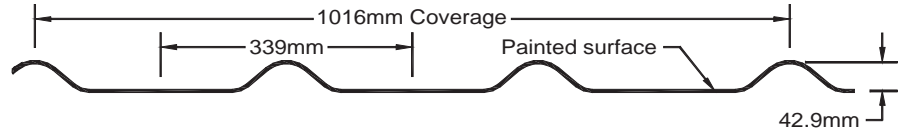




# Roll Form Group

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**SAMUEL MANU-TECH INC.**  
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# TRAFFORD PANEL



### SECTION PROPERTIES (PER METRE OF WIDTH)

| METRIC | Base Steel Thickness (mm) | Coated Steel Thickness (Z275) (mm) | Coated Mass (kg/m <sup>2</sup> ) | Sec. Modulus                       |                                    | Deflection Moment of Inertia (10 <sup>6</sup> mm <sup>4</sup> ) | Specified Web Crippling Data |                          |                               |                               |
|--------|---------------------------|------------------------------------|----------------------------------|------------------------------------|------------------------------------|---|------------------------------|--------------------------|-------------------------------|-------------------------------|
|        |                           |                                    |                                  | Midspan                            | Support                            |   | P <sub>e1</sub> End (kN)     | P <sub>e2</sub> End (kN) | P <sub>i1</sub> Interior (kN) | P <sub>i2</sub> Interior (kN) |
|        |                           |                                    |                                  | (10 <sup>3</sup> mm <sup>3</sup> ) | (10 <sup>3</sup> mm <sup>3</sup> ) |   |                              |                          |                               |                               |
|        | 0.457                     | 0.497                              | 4.65                             | 4.18                               | 3.50                               | 0.129   | 0.454                        | 0.173                    | 0.909                         | 0.082                         |
|        | 0.610                     | 0.650                              | 6.11                             | 5.75                               | 4.84                               | 0.172   | 0.808                        | 0.307                    | 1.62                          | 0.145                         |
|        | 0.762                     | 0.802                              | 7.57                             | 7.17                               | 6.19                               | 0.214   | 1.26                         | 0.480                    | 2.52                          | 0.227                         |
|        | 0.914                     | 0.954                              | 9.02                             | 8.59                               | 7.56                               | 0.257   | 1.82                         | 0.690                    | 3.63                          | 0.327                         |
|        | 1.22                      | 1.26                               | 11.9                             | 11.4                               | 10.4                               | 0.344   | 3.23                         | 1.23                     | 6.46                          | 0.581                         |

### MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOAD (kPa)

| SPAN LENGTH (m) |   | 1-SPAN                    |       |       |       |      | 2-SPAN                    |       |       |       |      | 3-SPAN                    |       |       |       |      |
|-----------------|---|---------------------------|-------|-------|-------|------|---------------------------|-------|-------|-------|------|---------------------------|-------|-------|-------|------|
|                 |   | BASE STEEL THICKNESS (mm) |       |       |       |      | BASE STEEL THICKNESS (mm) |       |       |       |      | BASE STEEL THICKNESS (mm) |       |       |       |      |
|                 |   | 0.457                     | 0.610 | 0.762 | 0.914 | 1.22 | 0.457                     | 0.610 | 0.762 | 0.914 | 1.22 | 0.457                     | 0.610 | 0.762 | 0.914 | 1.22 |
| 0.5             | S | 18.5                      | 25.4  | 31.7  | 37.9  | 50.3 | 15.4                      | 21.4  | 27.3  | 33.4  | 45.9 | 19.3                      | 26.7  | 34.1  | 41.7  | 57.3 |
|                 | D | 89.1                      | 119   | 149   | 178   | 238  | 214                       | 285   | 357   | 428   | 571  | 168                       | 225   | 281   | 337   | 450  |
| 0.6             | S | 12.8                      | 17.6  | 22.0  | 26.3  | 35.0 | 10.7                      | 14.9  | 19.0  | 23.2  | 31.8 | 13.4                      | 18.6  | 23.7  | 29.0  | 39.8 |
|                 | D | 51.6                      | 68.8  | 86.0  | 103   | 138  | 124                       | 165   | 206   | 248   | 331  | 97.5                      | 130   | 163   | 195   | 260  |
| 0.8             | S | 7.22                      | 9.91  | 12.4  | 14.8  | 19.7 | 6.03                      | 8.35  | 10.7  | 13.0  | 17.9 | 7.54                      | 10.4  | 13.3  | 16.3  | 22.4 |
|                 | D | 21.8                      | 29.0  | 36.3  | 43.6  | 58.1 | 52.2                      | 69.6  | 87.1  | 105   | 139  | 41.1                      | 54.8  | 68.6  | 82.3  | 110  |
| 1.0             | S | 4.62                      | 6.34  | 7.91  | 9.48  | 12.6 | 3.86                      | 5.35  | 6.83  | 8.35  | 11.5 | 4.82                      | 6.68  | 8.54  | 10.4  | 14.3 |
|                 | D | 11.1                      | 14.9  | 18.6  | 22.3  | 29.8 | 26.7                      | 35.7  | 44.6  | 53.5  | 71.4 | 21.1                      | 28.1  | 35.1  | 42.2  | 56.2 |
| 1.2             | S | 3.21                      | 4.41  | 5.50  | 6.58  | 8.74 | 2.68                      | 3.71  | 4.74  | 5.80  | 7.96 | 3.35                      | 4.64  | 5.93  | 7.25  | 9.95 |
|                 | D | 6.45                      | 8.60  | 10.8  | 12.9  | 17.2 | 15.5                      | 20.6  | 25.8  | 31.0  | 41.3 | 12.2                      | 16.3  | 20.3  | 24.4  | 32.6 |
| 1.4             | S | 2.36                      | 3.24  | 4.04  | 4.84  | 6.42 | 1.97                      | 2.73  | 3.48  | 4.26  | 5.85 | 2.46                      | 3.41  | 4.36  | 5.32  | 7.31 |
|                 | D | 4.06                      | 5.41  | 6.77  | 8.13  | 10.9 | 9.74                      | 13.0  | 16.3  | 19.5  | 26.0 | 7.67                      | 10.2  | 12.8  | 15.4  | 20.5 |
| 1.5             | S | 2.05                      | 2.82  | 3.52  | 4.21  | 5.59 | 1.72                      | 2.38  | 3.04  | 3.71  | 5.09 | 2.14                      | 2.97  | 3.79  | 4.64  | 6.37 |
|                 | D | 3.30                      | 4.40  | 5.50  | 6.61  | 8.82 | 7.92                      | 10.6  | 13.2  | 15.9  | 21.2 | 6.24                      | 8.32  | 10.4  | 12.5  | 16.7 |
| 1.6             | S | 1.80                      | 2.48  | 3.09  | 3.70  | 4.92 | 1.51                      | 2.09  | 2.67  | 3.26  | 4.48 | 1.88                      | 2.61  | 3.33  | 4.08  | 5.60 |
|                 | D | 2.72                      | 3.63  | 4.54  | 5.44  | 7.27 | 6.53                      | 8.70  | 10.9  | 13.1  | 17.4 | 5.14                      | 6.86  | 8.57  | 10.3  | 13.7 |
| 1.8             | S | 1.43                      | 1.96  | 2.44  | 2.93  | 3.88 | 1.19                      | 1.65  | 2.11  | 2.58  | 3.54 | 1.49                      | 2.06  | 2.63  | 3.22  | 4.42 |
|                 | D | 1.91                      | 2.55  | 3.19  | 3.82  | 5.10 | 4.58                      | 6.11  | 7.65  | 9.18  | 12.3 | 3.61                      | 4.81  | 6.02  | 7.23  | 9.64 |
| 2.0             | S | 1.15                      | 1.59  | 1.98  | 2.37  | 3.15 | 0.96                      | 1.34  | 1.71  | 2.09  | 2.87 | 1.21                      | 1.67  | 2.13  | 2.61  | 3.58 |
|                 | D | 1.39                      | 1.86  | 2.32  | 2.79  | 3.72 | 3.34                      | 4.46  | 5.57  | 6.69  | 8.93 | 2.63                      | 3.51  | 4.39  | 5.27  | 7.03 |
| 2.2             | S | 0.95                      | 1.31  | 1.64  | 1.96  | 2.60 | 0.80                      | 1.10  | 1.41  | 1.72  | 2.37 | 1.00                      | 1.38  | 1.76  | 2.16  | 2.96 |
|                 | D | 1.05                      | 1.40  | 1.74  | 2.09  | 2.79 | 2.51                      | 3.35  | 4.19  | 5.03  | 6.71 | 1.98                      | 2.64  | 3.30  | 3.96  | 5.28 |
| 2.4             | S | 0.80                      | 1.10  | 1.37  | 1.65  | 2.18 | 0.67                      | 0.93  | 1.19  | 1.45  | 1.99 | 0.84                      | 1.16  | 1.48  | 1.81  | 2.49 |
|                 | D | 0.81                      | 1.07  | 1.34  | 1.61  | 2.15 | 1.93                      | 2.58  | 3.23  | 3.87  | 5.17 | 1.52                      | 2.03  | 2.54  | 3.05  | 4.07 |
| 2.5             | S | 0.74                      | 1.02  | 1.27  | 1.52  | 2.01 | 0.62                      | 0.86  | 1.09  | 1.34  | 1.83 | 0.77                      | 1.07  | 1.37  | 1.67  | 2.29 |
|                 | D | 0.71                      | 0.95  | 1.19  | 1.43  | 1.90 | 1.71                      | 2.28  | 2.85  | 3.43  | 4.57 | 1.35                      | 1.80  | 2.25  | 2.70  | 3.60 |
| 2.6             | S | 0.68                      | 0.94  | 1.17  | 1.40  | 1.86 | 0.57                      | 0.79  | 1.01  | 1.23  | 1.70 | 0.71                      | 0.99  | 1.26  | 1.54  | 2.12 |
|                 | D | 0.63                      | 0.85  | 1.06  | 1.27  | 1.69 | 1.52                      | 2.03  | 2.54  | 3.05  | 4.06 | 1.20                      | 1.60  | 2.00  | 2.40  | 3.20 |
| 2.8             | S | 0.59                      | 0.81  | 1.01  | 1.21  | 1.61 | 0.49                      | 0.68  | 0.87  | 1.06  | 1.46 | 0.62                      | 0.85  | 1.09  | 1.33  | 1.83 |
|                 | D | 0.51                      | 0.68  | 0.85  | 1.02  | 1.36 | 1.22                      | 1.62  | 2.03  | 2.44  | 3.25 | 0.96                      | 1.28  | 1.60  | 1.92  | 2.56 |

- Notes:**
- 1 Based on ASTM A 653 Grade 275 structural steel.
  - 2 Values in row "S" are based on strength.
  - 3 Values in row "D" are based on deflection of 1/180th span.
  - 4 Web crippling not included in strength calculations. See Example.

Limit States Design principles were used in accordance with CSA Standard S136-01

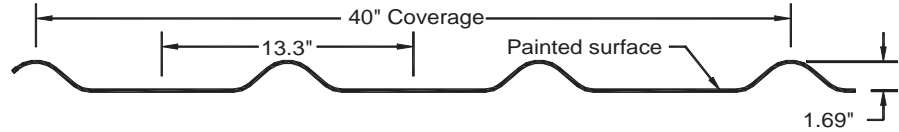




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# TRAFFORD PANEL



### SECTION PROPERTIES (PER FOOT OF WIDTH)

| IMPERIAL | Base Steel Thickness (in.) | Coated Steel Thickness (G90) (in.) | Coated Weight (psf) | Sec. Modulus        |                     | Deflection Moment of Inertia (in. <sup>4</sup> ) | Specified Web Crippling Data |                          |                               |                               |
|----------|----------------------------|------------------------------------|---------------------|---------------------|---------------------|--|------------------------------|--------------------------|-------------------------------|-------------------------------|
|          |                            |                                    |                     | Midspan             | Support             |  | P <sub>e1</sub> End (lb)     | P <sub>e2</sub> End (lb) | P <sub>i1</sub> Interior (lb) | P <sub>i2</sub> Interior (lb) |
|          |                            |                                    |                     | (in. <sup>3</sup> ) | (in. <sup>3</sup> ) |  |                              |                          |                               |                               |
|          | 0.018                      | 0.0195                             | 0.952               | 0.0634              | 0.0512              | 0.0814   | 37.3                         | 14.2                     | 74.6                          | 6.72                          |
|          | 0.024                      | 0.0255                             | 1.25                | 0.0843              | 0.0702              | 0.109  | 66.4                         | 25.2                     | 132.7                         | 11.94                         |
|          | 0.030                      | 0.0315                             | 1.55                | 0.105               | 0.0899              | 0.136  | 103.7                        | 39.4                     | 207.4                         | 18.66                         |
|          | 0.036                      | 0.0375                             | 1.85                | 0.126               | 0.110               | 0.163  | 149.3                        | 56.7                     | 298.6                         | 26.87                         |
|          | 0.048                      | 0.0495                             | 2.45                | 0.168               | 0.152               | 0.218  | 265.4                        | 100.9                    | 530.8                         | 47.78                         |

### MAXIMUM UNIFORMLY DISTRIBUTED SPECIFIED LOAD (PSF)

| SPAN LENGTH (ft) |   | 1-SPAN                        |       |       |       |       | 2-SPAN                        |       |       |       |       | 3-SPAN                        |       |       |       |       |
|------------------|---|-------------------------------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|
|                  |   | BASE STEEL THICKNESS (inches) |       |       |       |       | BASE STEEL THICKNESS (inches) |       |       |       |       | BASE STEEL THICKNESS (inches) |       |       |       |       |
|                  |   | 0.018                         | 0.024 | 0.030 | 0.036 | 0.048 | 0.018                         | 0.024 | 0.030 | 0.036 | 0.048 | 0.018                         | 0.024 | 0.030 | 0.036 | 0.048 |
| 2.0              | S | 253                           | 337   | 421   | 504   | 670   | 205                           | 281   | 360   | 441   | 607   | 256                           | 351   | 450   | 551   | 758   |
|                  | D | 888                           | 1184  | 1481  | 1778  | 2374  | 2131                          | 2842  | 3555  | 4268  | 5697  | 1678                          | 2238  | 2800  | 3361  | 4487  |
| 2.5              | S | 102                           | 216   | 269   | 323   | 429   | 131                           | 180   | 230   | 282   | 388   | 164                           | 225   | 288   | 352   | 485   |
|                  | D | 455                           | 606   | 758   | 911   | 1215  | 1091                          | 1455  | 1820  | 2185  | 2917  | 859                           | 1146  | 1433  | 1721  | 2297  |
| 3.0              | S | 113                           | 150   | 187   | 224   | 298   | 91                            | 125   | 160   | 195   | 270   | 114                           | 156   | 200   | 245   | 337   |
|                  | D | 263                           | 351   | 439   | 527   | 703   | 631                           | 842   | 1053  | 1265  | 1688  | 497                           | 663   | 829   | 996   | 1329  |
| 3.5              | S | 83                            | 110   | 137   | 165   | 219   | 67                            | 92    | 117   | 144   | 198   | 84                            | 115   | 147   | 180   | 248   |
|                  | D | 166                           | 221   | 276   | 332   | 443   | 398                           | 530   | 663   | 796   | 1063  | 313                           | 418   | 522   | 627   | 837   |
| 4.0              | S | 63                            | 84    | 105   | 126   | 168   | 51                            | 70    | 90    | 110   | 152   | 64                            | 88    | 112   | 138   | 190   |
|                  | D | 111                           | 148   | 185   | 222   | 297   | 266                           | 355   | 444   | 534   | 712   | 210                           | 280   | 350   | 420   | 561   |
| 4.5              | S | 50                            | 67    | 83    | 100   | 132   | 40                            | 55    | 71    | 87    | 120   | 51                            | 69    | 89    | 109   | 150   |
|                  | D | 78                            | 104   | 130   | 156   | 208   | 187                           | 250   | 312   | 375   | 500   | 147                           | 197   | 246   | 295   | 394   |
| 5.0              | S | 41                            | 54    | 67    | 81    | 107   | 33                            | 45    | 58    | 70    | 97    | 41                            | 56    | 72    | 88    | 121   |
|                  | D | 57                            | 76    | 95    | 114   | 152   | 136                           | 182   | 228   | 273   | 365   | 107                           | 143   | 179   | 215   | 287   |
| 5.5              | S | 34                            | 45    | 56    | 67    | 89    | 27                            | 37    | 48    | 58    | 80    | 36                            | 46    | 59    | 73    | 100   |
|                  | D | 43                            | 57    | 71    | 86    | 114   | 102                           | 137   | 171   | 205   | 274   | 81                            | 108   | 135   | 162   | 216   |
| 6.0              | S | 28                            | 37    | 47    | 56    | 74    | 23                            | 31    | 40    | 49    | 67    | 28                            | 39    | 50    | 61    | 84    |
|                  | D | 33                            | 44    | 55    | 66    | 88    | 79                            | 105   | 132   | 158   | 211   | 62                            | 83    | 104   | 124   | 166   |
| 6.5              | S | 24                            | 32    | 40    | 48    | 63    | 19                            | 27    | 34    | 42    | 57    | 24                            | 33    | 43    | 52    | 72    |
|                  | D | 26                            | 35    | 43    | 52    | 69    | 62                            | 83    | 104   | 124   | 166   | 49                            | 65    | 82    | 98    | 131   |
| 7.0              | S | 21                            | 28    | 34    | 41    | 55    | 17                            | 23    | 29    | 36    | 50    | 21                            | 29    | 37    | 45    | 62    |
|                  | D | 21                            | 28    | 35    | 41    | 55    | 50                            | 66    | 83    | 100   | 133   | 39                            | 52    | 65    | 78    | 105   |
| 7.5              | S | 18                            | 24    | 30    | 36    | 48    | 15                            | 20    | 26    | 31    | 43    | 18                            | 25    | 32    | 39    | 54    |
|                  | D | 17                            | 22    | 28    | 34    | 45    | 40                            | 54    | 67    | 81    | 108   | 32                            | 42    | 53    | 64    | 85    |
| 8.0              | S | 16                            | 21    | 26    | 32    | 42    | 13                            | 18    | 22    | 28    | 38    | 16                            | 22    | 28    | 34    | 47    |
|                  | D | 14                            | 19    | 23    | 28    | 37    | 33                            | 44    | 56    | 67    | 89    | 26                            | 35    | 44    | 53    | 70    |
| 8.5              | S | 14                            | 19    | 23    | 28    | 37    | 11                            | 16    | 20    | 24    | 34    | 14                            | 19    | 25    | 30    | 42    |
|                  | D | 12                            | 15    | 19    | 23    | 31    | 28                            | 37    | 46    | 56    | 74    | 22                            | 29    | 36    | 44    | 58    |
| 9.0              | S | 13                            | 17    | 21    | 25    | 33    | 10                            | 14    | 18    | 22    | 30    | 13                            | 17    | 22    | 27    | 37    |
|                  | D | 10                            | 13    | 16    | 20    | 26    | 23                            | 31    | 39    | 47    | 63    | 18                            | 25    | 31    | 37    | 49    |

- Notes:**
- 1 Based on ASTM A 653 Grade 40 structural steel.
  - 2 Values in row "S" are based on strength.
  - 3 Values in row "D" are based on deflection of 1/180th span.
  - 4 Web crippling not included in strength calculations. See Example.

Limit States Design principles were used in accordance with CSA Standard S136-01

